Specification

Replace paragraphs [0015] and [0018] with the following corrected paragraphs:

[0015] Fig. 1 is a block diagram of a conventional magnetic recording hard disk drive ~~10~~. The disk drive ~~10~~ includes a magnetic recording disk 12 and a rotary voice coil motor (VCM) actuator 14 supported on a disk drive housing or base 16. The disk 12 has a center of rotation 13 and is rotated in direction 15 by a spindle motor (not shown) mounted to base 16. The actuator 14 pivots about axis 17 and includes a rigid actuator arm 18. A generally flexible suspension 20 includes a flexure element 23 and is attached to the end of arm 18. A head carrier or air-bearing slider 22 is attached to the flexure 23. A magnetic recording read/write head 24 is formed on the trailing surface 25 of slider 22. The flexure 23 and suspension 20 enable the slider to "pitch" and "roll" on an air-bearing generated by the rotating disk 12. Typically, there are multiple disks stacked on a hub that is rotated by the spindle motor, with a separate slider and read/write head associated with each disk surface.

[0018] Fig. 4 is an enlarged sectional view showing the layers making up sensor 100. Sensor 100 is a CIP-SV read head comprising a stack of layers formed between the two insulating gap layers G1, G2 that are typically an oxide such as alumina (Al2O3). The sensor layers include a pinned ferromagnetic layer 106 having a fixed or pinned magnetic moment or magnetization direction 107 oriented transversely (into the page), a free ferromagnetic layer 110 having a magnetic moment or magnetization direction 111 that can rotate in the plane of layer 110 in response to transverse external magnetic fields, and a nonmagnetic electrically-conductive spacer layer 108 between the pinned layer 106 and free layer 110. The pinned layer 106 is exchange-coupled with an antiferromagnetic layer 104 that is formed on a suitable underlayer or seed layer 103. Thus the magnetization direction 107 of pinned layer 106 is fixed and will not rotate in the presence of an external magnetic field in the range of interest, i.e., magnetic fields from recorded data on the disk 12. With a sense current ~~IS~~ I_S applied generally in the planes of the free layer 110 and pinned layer 106 from electrical leads (not shown) connected at the edges of the sensor, the rotation of the free-layer magnetization ~~110~~ 111 relative to the pinned-layer magnetization 107, due to the magnetic fields from the disk, is detectable as a change in electrical resistance.